

Math 1342
Mathematics for Elementary/Middle School Teachers II
Fall 2011 Syllabus

Disclaimer:

This syllabus is current and accurate as of its posting date, but will not be updated. For the most complete and up-to-date course information, contact the instructor.

Instructor Information:

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Office Hours:

Monday-Thursday: 8:30am - 9:30am

Monday/Wednesday/Friday: 2:00pm - 4:00pm

Major Course Requirements

TESTS

We will have three tests. The third exam will be taken during final exam week (Tuesday 12/6 from 10:30-12:30).

I do not give make-up exams. If you miss an exam, you will take a **comprehensive** final instead of the third test. This grade will count as the third test and replace the missed exam. You may take an exam early **ONLY** if I excuse the absence.

IN-CLASS ACTIVITIES

We will be doing many in-class activities and I usually take a daily grade for your participation. Reading about an activity is very different from experiencing an activity, so it is imperative that you make every effort to attend class. Most of these activities will involve the use of math manipulatives and will be done in small groups. Besides learning mathematical content in an inquiry-based environment, these activities will focus on learning how to communicate your thinking and how to listen to your peers. Hopefully, they will give you a deeper understanding of the content, and also give you ideas on how to teach math to children.

Note: If you are caught texting, sleeping, or working on material for another class you will receive a participation grade of zero for that day.

HOMEWORK AND QUIZZES

All homework and quizzes should be worked with a #2 pencil and folded in half length-wise with your name and assignment number on the outside. Please use standard size white notebook paper (or unlined bond) for homework. If you have more than one piece of paper, staple your papers together in the upper left-hand corner. Box in your answers. Except for true/false and completion problems, show your work in an organized readable form. When I grade your tests, I will grade your work as well as your answers. A general rule is to show as much work on your papers as I show on similar problems in class. *If you hand in homework with no work shown, you will get a grade of 0.*

I will accept 1 set of late homework only. I plan to drop six daily grades before computing your daily average. This is the leeway you are given to allow for unavoidable absences. You need to think of this as your insurance in case you get sick or have a family emergency. Do not waste them! If you know you are going to be absent, bring your homework by my office before class or send it with a classmate. **Homework assignments are due promptly at the beginning of the next class period. If you come in tardy, your homework will be counted as late.** If you are absent, it is your responsibility to look on Blackboard and find out what homework was assigned. I would also appreciate it if you contact me to discuss your absences.

CENTERS

In a K-8 classroom, centers are hands-on activities that introduce new concepts, enrich or reinforce concepts that have already been taught, or help children make connections between different ideas. Centers are usually done in small groups with little or no teacher assistance. I plan to set up centers for you to do during the semester. It will be your responsibility to do these centers outside of class time. Most (if not all) will require you to do them in our classroom because there will be instructions and materials provided. Times that are available for access to the classroom will be announced soon.

PORTFOLIOS

A portfolio is a collection of various things for and about each student. It has many purposes: to teach organizational skills, to keep track of assignments, to use as a study guide, to create a resource file for future use, etc. Please bring a 3-ring binder and a package of 8 dividers to the 2nd class period so that we can put your portfolio together. Your divider tabs need to be labeled: Assignments, Test 1 material, Test 2 material, Test 3 material, NCTM journals, tests, miscellaneous, and lab manual. You also need to make a title page that includes: MATH 1342, Mathematics for Elementary/Middle School Teachers II, Fall 2011, and your name. You may leave your textbook at home, but bring your portfolio to class every day.

ATTENDANCE POLICY:

If a student has more than 6 absences, a grade of F will be assigned.

Attendance will be taken daily. If you are tardy, it is *your* responsibility to let me know after class so I can change my records. Do not make tardiness a habit.

PROJECTS

You have a choice between the three projects described below. This will count 5% of your semester average.

1) STARS

Contact person: Amy.Arnold@saisd.org

The *Students and Tutors Achieving Remarkable Success* is a tutoring program where you will have the opportunity to work with an elementary student as a math tutor. This is a valuable experience that helps children and is critical to your development as a teacher. You will be working 10 half-hour sessions. The sessions are spread out over the semester (1 per week, excluding the first few weeks of the semester, Spring Break, and the last two weeks of the semester). If you choose to do STARS and complete all 10 sessions, you will receive a project grade of 100. If you fail to complete all 10 sessions, you will receive a grade of 0. STARS is a commitment to children, and it's important that you don't disappoint them.

2) Math tutoring at the Central Freshman Campus

Contact person: Vanna.Almond@saisd.org

The CFC is always in need of math tutors for Algebra I. Your commitment will consist of 6 55-minute sessions. This is an option only for those of you who are getting Middle School Certification, or have special permission. If you complete all 6 sessions, you will get a grade of 100. If you complete less than 6 full sessions, you will get a grade of 0.

3) NCTM Journal Articles

This involves going to the ASU library, finding 4 journal articles from either *Teaching Children Mathematics* or *Mathematics Teaching in the Middle School* and then writing essays. Essays should be two to three pages long (double spaced) and must be typed. I will be grading spelling and grammar.

Grading Rubric:

| | |
|-----------|--|
| 10 points | Email me your journal title at least 2 days before the due date. I will approve or ask you to find another article. Students cannot critique the same article. |
| 20 points | Copy your article and turn it in with your essay. |
| 35 points | In essay, summarize article |
| 35 points | In essay, give your thoughts on the article. This could include: how this affects your thinking as a pre-service teacher, appropriate grade level issues, how you could use this in your future classroom, how it could be altered for a different grade level, how you remember learning this content when you were a child, etc. |

Topics/Due Dates:

| Topic | Due Dates |
|---|-----------|
| Ratio, proportion, or percent | Sept 14 |
| Basic Geometry | Oct 10 |
| Measurement, area, perimeter, surface area, or volume | Nov 7 |
| Statistics or probability | Nov 30 |

GRADING

Assignments and grades will be posted on Blackboard. Throughout the semester there will be:

Homework, in-class activities, Internet assignments, journal assignments, portfolio checks, etc. These will all be combined to form the daily average.

Daily average.....20% of the semester average
Each test.....25% of the semester average
Project5% of the semester average

I use the standard: 100 – 90 A, 89 – 80 B, 79 – 70 C, 69 – 60 D, below 60 F. This class is part of the coursework for your major, so a grade of C or better is required to pass.

MATH LAB

There is a free math lab where you can do your homework and get help with it. It is now located on the third floor of the library in room C302. Here's the schedule:

Monday-Thursday: 9:00 am– 4:00 pm & 6:00 pm – 9:00 pm
Friday: 9:00 am– 4:00 pm
Sunday: 5:00 pm – 8:00 pm

PREREQUISITE

College Algebra and Math 1341 with grades of C or better.

REQUIRED TEXT

Mathematics for Teachers, 4th Edition by Thomas Sonnabend ISBN 0-495-56166-5

MISC.

Stuff to buy: Notebook paper
One 3-inch 3-ring binder
One packet of 8 tabs
Protractor, compass, & ruler
The textbook: *Mathematics for Teachers*, 4th Edition by Thomas Sonnabend
ISBN 0-495-56166-5
The 1342 lab manual (only available at the ASU Bookstore)

I expect students to be respectful of all the members of our class. Please refrain from any avoidable distracting behavior such as talking during the lecture, getting off-task during the activity time, wearing strong perfume, leaving your cell phone on, text messaging, etc.

Persons with disabilities which may warrant academic accommodations must contact the Student Life Office, Room 112 University Center, in order to request such accommodations prior to any accommodations being implemented. You are encouraged to make this request early in the semester so that appropriate arrangements can be made.

Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is available on the web at <http://www.angelo.edu/forms/pdf/honorcode5.pdf>.

Any student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence.

Student Learning Outcomes

1. Students will gain factual knowledge including the mathematical terminology, classifications, and methods used in this course. Students will use the vocabulary, symbolism, structure, reasoning, and procedures that are needed to teach the mathematical content for grades K-8+. See course content for more details.

2. Students will learn the fundamental principles, generalizations, and theories covered in this course. Students will demonstrate understanding of the conservation of area and volume; non-standard and standard measurement; proportionality, similarity, congruence, and basic probability.

3. Students will learn to apply course material. Students will be able to make connections between concepts and also apply knowledge in a new and different setting. In particular, students will learn how to translate course content into K-8 grade-appropriate lessons.

4. Students will develop specific skills, competencies, and points of view needed by K-8 mathematics teachers. Besides learning the mathematical content of this course, students will:

- become familiar with the Texas Essential Knowledge and Skills (TEKS) and the National Council of Teachers of Mathematics (NCTM) Standards;
- learn multiple approaches to the teaching of mathematics;
- use manipulatives to model mathematical concepts;
- develop communications skills (oral, written, and listening), knowledge of appropriate vocabulary, and various questioning strategies;
- learn how to use resources (such as the Internet and NCTM journals) in planning classroom activities.

5. Students will gain a broader understanding and appreciation for mathematics.

Course Content

The following chapters from the textbook are covered:

7. Decimals, Percents, and Real Numbers. ratio and proportion; percents. (The rest of this chapter is covered in Math 1341.)

8. Introductory Geometry. beginning geometry; polygons; triangles, quadrilaterals, and circles; angle measures of polygons; three-dimensional geometry; viewing and drawing solid figures.

9. Congruence, Symmetry, and Similarity. transformations and congruence; applications of transformations; constructions and congruence; symmetry; similarity and dilations.

10. Measurement. systems of measurement; perimeter and area; areas of quadrilaterals, triangles, and circles; the Pythagorean theorem; surface area; volume; lengths, areas, and volumes of similar figures.

12. Statistics. observational studies and experiments; statistical graphs and tables; misleading graphs and statistics; mode, median, and mean; measuring spread; standardized test scores. (as time permits)

13. Probability. experimental and theoretical probability; probability rules and simulations.

The subject matter schedule listed below is tentative and subject to change and adaption. For current updated information, contact the instructor.

| Week # | Subject Matter |
|---------------|---|
| 1 | Ratios & proportions, conversions |
| 2 | Ratios & proportions, scale, inverse & direct variation, percents |
| 3 | Percents, basic geometry |
| 4 | Basic geometry, 2-dimensional geometry |
| 5 | Polygons, 2-dimensional geometry |
| 6 | TEST 1, constructions, 3-dimensional solids |
| 7 | Nets, solids, transformations |
| 8 | Transformations, tessellations, 3-dimensional geometry |
| 9 | Constructions, congruent triangles, measurement, dimensional analysis |
| 10 | TEST 2, metric system, area & perimeter |
| 11 | Area, circles |
| 12 | Area, Pythagorean theorem, surface area & volume of solids |
| 13 | Probability |
| 14 | Probability & statistics |
| 15 | Statistics |
| 16 | TEST 3 |